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STRATEGY RESEARCH PROJECT

COUNTERING NUCLEAR WEAPONS OF MASS DESTRUCTION: ARE WE DOING ENOUGH?

BY

LIEUTENANT COLONEL LANCE A. MOORE United States Army

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Countering Nuclear Weapons of Mass Destruction:

Are We Doing Enough?

by

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U.S. Army War College CARLISLE BARRACKS, PENNSYLVANIA 17013

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ABSTRACT

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Countering nuclear fissile material leakage from the former Soviet Union should be the First National Security Priority of the United States. This problem is here today, and we must be prepared to deal with it now and in the future. It is simply not going to go away with time. Once these nuclear weapons and weapons-useable nuclear material's have dispersed to the possession of Third World rogue states, there is not much we can do to prevent their usage in a regional setting by U.S. Military This study discusses national policy and military options means. available to counter hostile countries nuclear weapons before and There are no clear cut policies and easy military after use. means for neutralizing nuclear weapons in the most likely Therefore, The U.S. National Command Authority should scenarios. consider the framework of these policy and military options in countering nuclear weapons of mass destruction in the future.

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INTRODUCTION

This study is about nuclear fissile material leakage from the former Soviet Union. The impact of uncontrolled (loose) nuclear weapons and weapons-useable nuclear material is widely regarded as the number one threat to the United States National Security interests. Russia has a tremendous amount of nuclear material and security is bad. Countries wishing to acquire nuclear materials to threaten U.S. interests are many. Once Third World countries have acquired nuclear weapons and fissile material, there is little we can do to counter this situation. This paper provides the details of Russian nuclear weapons-useable material leakage, and recommends policy options to deal with this critical threat to U.S. forces and other security interests.

Since the collapse of communism in the former Soviet Union, dangerous inadequacies of nuclear security have become readily apparent. The Standard nuclear technology of the West, radiation detectors, microwave sensors, and video monitors, is often out of date, out of order, or usually nonexistent. Hundreds of nuclear weapons plants and storage facilities are poorly protected, inadequately managed, and/or bankrupt. Security and inventory control of nuclear fissionable materials are grossly inadequate. Terrorists already may have already acquired enough nuclear material to make a bomb. In the article, "Disquiet on the Eastern Front," Oleg Bukharin paints a dismal picture of

Russia's Ministry of Atomic Energy's (MINATOM) inability to ensure security of nuclear weapons complexes in the face of economic chaos.

The situation is exacerbated by the Russian Federal Government's inability to pay wages to nuclear employees and for facility upgrades. For instance, Bukharin states, "In late 1996, the government owed Chelyabinsk-70 \$ 23 million, including \$7 million in delayed wages." The work of the enterprise is practically paralyzed, wrote Chelyabinsk-70's director, Vladimar Nechai, in a September 1996 letter to Prime Minister Victor Chernomyrdin. A month later Nechai shot himself due to his helplessness in watching his life's work, which encompasses security of nuclear fissile material, disintegrate into ruins.¹

Department of Defense and Central Intelligence Agency officials have warned that the former Soviet Union's "loose nukes" pose a deadly threat to Western security. "It has the makings of a nuclear-proliferation catastrophe, "says Harvard University professor Graham T.Allison, co-author of "Avoiding Nuclear Anarchy. "To give us an idea of the seriousness of the problem, Allison cites an example in which "inspectors from the Russian Ministry of Defense discovered a battery of nuclear armed SS-25 missiles completely abandoned - the operators and guards having deserted their posts in search of food." "

Russian nuclear workers have lost status, prestige, and economic security since the downfall of the Soviet Union.

Typical monthly wages in the industry may run from \$ 100 - \$ 200, when workers are paid at all. Some moonlight as street traders or cabdrivers to feed their families. They know that nuclear fissile materials are valuable and admit that stealing them can be easy. For some nuclear industry insiders who are cold and hungry, that temptation can be irresistible.

Since 1992, there have been six known incidents of nuclear fissile material leakage from the former Soviet Union. The first instance involved a nuclear employee at Podolsk, Russia , who stole approximately 3.7 pounds of highly enriched uranium (HEU) from the Luch Scientific Production Association facility in mid-1993. A second occurred at Murmansk, Russia . According to Graham Allison, one night in November 1993, a Russian Naval Captain entered a shipyard near Murmansk , identified a facility used for reactor fuel storage, and easily removed fuel containing about 10 pounds of weapons grade HEU. The Quantity was smaller than a coke can; which he put in a bag and walked out of the shipyard without a challenge. The Naval Captain had been briefed by his brother, who was a civilian shipyard employee, that security of the substantial inventory of highly enriched uranium used for naval nuclear reactors was virtually non-existent. Russian Naval Captain put the fissile material in his garage and was looking for a buyer when he was apprehended

According to US Senate testimony, a third known incident occurred in December 1994 when police in Prague, capital of the

Czech Republic, seized over six pounds of highly enriched uranium (HEU) encased in two plastic-wrapped metal containers in the back seat of a Saab parked on a side street. Arrested were a Czech nuclear scientist, a Russian, and a Belarussian. Also in 1994, a fourth incident occurred when German Police stumbled across approximately 6 grams of plutonium in the garage of a suspected counterfeiter in Tergen, Germany. The fifth and sixth known incidents of nuclear leakage involved clever sting operations by the German Police - one at the Munich Airport resulting in seizure of a pound of weapons grade plutonium and 0.8 grams of HEU in Landshut, Germany.⁴

The press has been filled with accounts of alleged illegal trafficking of nuclear fissile material since the collapse of the former Soviet Union. The extent of these press reports has been in the hundreds with most amounting only to hoaxes. Is there a supply and demand side that can account for this flurry of press activity? The available facts should cause us grave concern for the following reasons. First of all, since the many attempts to sell nuclear materials, this implies there is a viable market for nuclear materials outside the former Soviet Union. Secondly, the previously mentioned six known incidents indicate a major effort to fill requisitions for the supply side of a growing Black Market in weapons grade nuclear materials. Third, on the demand side - what if a rogue state like Iran or Iraq offered substantial funds through the Black Market - who would know?

Lastly, at the bottom of hundreds of press reports of alleged cases of nuclear smuggling, there are in fact a small number of known incidents of illicit trafficking that could have far - reaching effects on the national security interests of the United States.

A hypothetical situation could involve a rogue state or terrorist group with roots in Iran or Iraq with hostile intentions toward the United States, with the ability to easily fabricate a nuclear device with a 30-pound slug of HEU or half that of plutonium. Blueprint plans to build a suitcase nuclear weapon can be downloaded by anyone with access to the Internet. Weaponized, this small amount of HEU or plutonium could create an explosion on the magnitude of 10 - 20 kilotons and would demolish an area of about 3 square miles. For those who are familiar with New York City, it is conceivable that if the terrorist van at the World Trade Center had carried such a softball rather than the explosives that it actually carried, lower Manhattan basically would have disappeared, including the financial district up to Gramercy Park.⁵

After considering these circumstances, one must ask the question, is our policy of Countering Weapons of Mass Destruction adequate? The latest Presidential Decision Directive PDD 39 concerning weapons of mass destruction (WMD) states that

" the United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat, and manage the consequences of nuclear, biological, or chemical materials or weapons used by terrorists. The acquisition of weapons of mass destruction by a terrorist group, through theft or manufacture, is unacceptable. There is no higher priority than preventing the acquisition of this capability from terrorist groups potentially opposed to the U.S."

This policy is further reinforced by the recent publication of President Clinton's, "A National Security Strategy for a New Century," which states

Weapons of Mass Destruction pose the greatest potential threat to global security. We must continue to reduce the threat posed by existing arsenals of such weaponry as well as work to stop the proliferation of advanced technologies that place these destructive capabilities in the hands of parties hostile to US and global security interests. Danger exists from outlaw states opposed to regional and global security efforts and transnational actors, such as terrorists or international crime organizations, potentially employing nuclear, chemical, or biological weapons against unprotected peoples and governments.⁷

The president's policy on countering WMD appears to be succinct and to the point. Let us now analyze this policy using a conceptual framework of ends, ways, and means.

Taking a look at the policy objectives, i. e., ends, PDD 39 briefly states that "The United States shall give the highest priority to counter WMD use by terrorists." According to U. S. Senate testimony of Senators Lugar and Nunn, Dr. Allison asked the following two questions:

Question 1. Is the assertion that has been made by you, Senator Lugar, and by your colleague, Senator Nunn. that the number threat to US security today is the threat of what I have called loose nukes and loose weapons - usable nuclear materials correct ? Yes or no ?

Question 2. If the answer is yes, the threat of loose nukes is indeed the number one threat to American

National Security today, are the current priorities, programs budgets, day-to-day activities of the US Government and the Russian government roughly proportionate to this number one challenge?⁹

Considering a defense budget in terms of "means" in the neighborhood of \$ 250 - 260 billion, one would assume that we would appropriate a lion's share of the budget to this effort.

And, certainly the policy of countering WMD would carry significantly more weight in the international arena than Haiti,

Bosnia, Somalia, and others. Clearly, the number one threat to our national security interests is loose nukes-and loose weapons-usable nuclear material. Unfortunately, only a small fraction of the budget was dedicated to this effort. Why is that the case ?

"In January 1994 President Clinton announced that the United States and Russia signed a contract to purchase \$ 12 billion of highly enriched uranium over the next 20 years." Unfortunately, in terms of achieving those objectives (ways), the U.S. Government missed the opportunity to implement a nonproliferation policy resulting in lower energy bills for U.S. consumers and improved U.S. national security. Until mid - 1995, public statements by Presidents Bush and Clinton indicated that the HEU purchase was proceeding apace. In fact, however, that was not true and the agreement was in danger of coming apart. No HEU had been purchased due to a dispute with the Russian government over the price to be paid for a small amount of material ordered in 1995. 11

The HEU deal was built on an unsound foundation in which the White House gave exclusive control for this mission to the U.S. Enrichment Corporation (USEC). Consequently, USEC had no incentive to give Russia a fair market value for the highly enriched uranium, resulting in gridlock on executing the deal. The United States has not purchased any HEU from Russia because we did not give them a fair price and thus the U.S. missed a great opportunity to eliminate nuclear leakage at the source.

Another method of controlling the spread of nuclear materials is through the outright purchase of fissile material from the former Soviet Union and transporting it back to the In terms of executing the (ways) of our National United States. Security Strategy, Project " Sapphire " is a shining example of The Kazakhstan government had quietly asked Washington success. to help it dispose of nuclear leftovers from the Soviet military. In November 1994, the Project Sapphire team removed approximately 600 Kg's of highly enriched uranium via several C-5 Galaxy USAF transport aircraft to Dover Air Force Base in Delaware. Within 48 hours, U.S. Department of Energy tractor trailers delivered the dangerous cargo to the high security of the Y-12 plant in Oak Ridge, Tennessee, where it was stored and later transported to another plant for conversion into commercial fuel. The rescue had come just in time. Security at the Ust-Kamenogorsk fuel fabrication facility in eastern Kazakhstan had been virtually nonexistent, with fissile materials stored under highly insecure

conditions. The price paid by the United States for Project Sapphire was in the low tens of millions of dollars, half in cash, half in aid. This is a small price to pay, considering the mutual benefit to the United States to prevent leakage of nuclear fissile materials and much needed assistance to the cash-strapped Kazakhstan government. 12

A potential course of action to the nuclear leakage threat, according to Dr. Graham Allison begins with Russia, where nuclear weapons and fissile material security efforts have waned instead of accelerated. The primary stumbling blocks are national sensitivity about nuclear weapons and a reluctance to expose potential problem areas. No one has more to lose from loose nuclear materials and weapons than Russia because of its geostrategic position and fragile internal composition. A Russian government that was eager and cooperative to eliminate the nuclear leakage problem would substantially change the situation. Allison also states that thus far, Congress has also been an inhibitor to arresting nuclear leakage to date. First, Congress must be willing to spend what is necessary to successfully address the nuclear threat. It is also in the best interests of the G-7 in preventing nuclear leakage and therefore be willing to commit substantially more funds and resources to the effort. And, finally, Dr. Allison points one simpler way to reduce the threat of nuclear leakage is to buy excess fissile

material in the former Soviet Union and transfer it to a secure locale. 13

Another course of action in diminishing the nuclear leakage issue as addressed by William B. Scott, is the laboratory-tolaboratory and nuclear material protection, control and accounting program (MPC&A) to accelerate progress in reducing the risk of nuclear weapons proliferation. Laboratory-to-laboratory exchanges have identified five areas of collaborative research and development aimed at the disposition of weapons grade materials: converting plutonium retrieved from weapons into an oxide, evaluating the quality of resulting oxides, assessing techniques for removing Gallium and Americium from Plutonium, analyzing radiation and nuclear safety measures, and defining material protection, control and accounting (MPC&A) that would be implemented throughout the weapons disassembly and material conversion process. 14 Today, six major U.S. nuclear laboratories are participating in laboratory-to-laboratory projects - -Sandia, Los Alamos, Livermore, Brookhaven, Oak Ridge, and Pacific Northwest. MPC&A activities moved very quickly, driven by a perceived need for immediate pragmatic action. 15

Based on current nuclear proliferation trends, there will be seven Third World Nations capable of employing nuclear weapons by the turn of the century. The countries that show the most nuclear potential or have already crossed the nuclear threshold are India, Pakistan, North Korea, Iran, Iraq, and Syria. All

have energized national treasuries to purchase nuclear weapons or build upon their existing nuclear capable forces in support of national interests.

Some Third World Nations such as India, Pakistan, and North Korea possess a tremendous capability to modify or build high tech delivery systems such as medium range ballistic missiles and high performance aircraft to deliver dozens of nuclear weapons.

The lower end of the nuclear technical spectrum occupied by Iran, Libya, and Syria may lack the cadre and facilities to build a nuclear arsenal. Therefore, to become a player in the nuclear arena they will need to purchase actual nuclear weapons or weapons grade HEU or Plutonium from Black Market or other sources.

The last of the Third World Seven, Iraq, is trying to hold UNSCOM inspectors from searching the greater than sixty palaces that may harbor special weapons. Why would Iraq forego \$120 billion in oil revenues over the past six years rather than cooperate with UNSCOM and reveal its WMD programs. The answer, according to Rolf Ekeus (Executive Chairman of UNSCOM), "Is that to the Iraqi leadership the country's WMD programs are of much higher value than the revenue they would have gained from selling oil. These Weapons of Mass Destruction could have made Iraq a major Regional Power, a dominate force in the Gulf." Essentially, they believe that they can deflect any aggressive adversary including superpowers like the U.S. with these weapons.

Consequently, the United States must take seriously the potentiality of one of the Third World Seven using a nuclear weapon in a regional setting.

According to a report on U.S. CENTCOM Regional Threats, Iran remains the number one threat to Persian Gulf stability and peace. Despite severe economic problems, Iran is continuing to pour vast amounts of its national treasure into rearming and modernizing its military forces, as well as Weapons of Mass Destruction development programs. Iran has acquired top shelf military equipment in the form of T-72 Tanks, Kilo-class submarines, and ballistic missiles from Russia, China and North Korea. Why is Iran like Iraq purchasing arms when their people are starving? ¹⁷ They are seeking regional hegemony through military power.

Even though Iran has signed the Nuclear Non - Proliferation

Treaty, they have pursued with vigor the purchase of nuclear

weapons technology, to include nuclear reactors from both eastern
and western suppliers.

Iran also possesses a superior Ballistic Missile System through purchases and contracts with North Korea and China. For instance, their ballistic missile arsenal now includes the 300 Km Scud-B and 500 Km Scud-C as well as purchase agreements for the 1000 Km No Dong missile. Iran now has the ability to strike anywhere within the Persian Gulf to include Israel. Why is Iran so obsessed with such an extensive military buildup which

includes a versatile WMD program? Could it be, a function of National Survival? The memory of the 1980-88 Iran-Iraq War is vivid in the minds of the Iranians who lost greater than 45,000 causalities due to Iraq's WMD capability. Perhaps Iran views Iraq through the eyes of a vulture, seeing a weakened Iraq with an economy in shambles, a reduced military capability, and a WMD capability that has been virtually eliminated. Since the demise of the former Iraq, Iran envisions itself as the premier regional leader and its efforts to rebuild its military as well as develop its WMD program underscores it's desire to project power. The containment of these terrible twins could be a serious concern in the future for the United States and the world.

According to Mrs. Albright (Secretary of State), "given Iran's persistent efforts to develop a nuclear capability, we are concerned that Iran may use this capability to develop Weapons of Mass Destruction Warheads." 19

Countering the proliferation of loose nuclear weapons and weapons-useable nuclear material should be the First National Security Priority of the United States. Once these materials have infiltrated to the possession of unsavory Third World Rogue States, there is not much we can do to prevent their usage in a regional setting by U.S. Military means. The reason is that there are no acceptable military means for neutralizing nuclear weapons in the most likely scenarios and now I will make that clear.

The Third World Seven are obtaining nuclear capabilities at an alarming rate. According to Kahan, there is a strong possibility that we will see one of these loose-cannon states use a nuclear weapon in a regional setting. The relative potential of nuclear weapon use by the Third World Seven is significant considering their political instability, and lack of safeguards or PAL devices to control release by their National Command Authorities, the potential use of a nuclear weapon which could threaten U.S. National Security Interests is high. A rogue state can easily reach out and strike our forward deployed soldiers, our citizens, and Allies without warning. Consequently, we may not be able to fix responsibility and punish the perpetrator.

The public outcry for military retaliation after a nuclear weapon strike on our vital national interests would be overwhelming. Strangely enough, we do not have a consensus plan or policy of how to respond militarily to a nuclear crisis.

Whether and how the United States would respond to a Third World nuclear situation is a complex issue. A Strategic Question the NCA would have to answer is whether the U.S. would respond with a preemptive attack on a Third World's nuclear force before use.

The only way we would respond with force is when deterrence and all efforts of diplomacy have failed. The method of how we would respond would vary on a case-by-case basis. However, before a nuclear crisis erupts, we can develop response guidelines to aid in building CONPLANS. In order for us to test preemptive action

directed by the NCA, let us explore three scenarios involving Third World Nuclear States.

SCENARIO 1

Political succession instability in North Korea triggers the launching of a strategic conventional ground attack against South Simultaneously, forward deployed U.S. ground forces are engulfed in the North Korean offensive. Subsequently, ROK forces blunt the North Korean offensive with a series of counterattacks in order to gain time while significant U.S. combat power flows into theater. Sensing that the momentum of the attack has stalled, North Korea threatens the use of nuclear weapons on U.S.and ROK forces as well as the continent of Japan. The US and ROK forces gain the initiative and push the North Korean Army back across the DMZ. U.S. National Intel sources detect North Korean Scud and No Dong Ballistic Missiles undergoing Technical Operations with the mating of Nuclear Warheads to missile assemblies in tactically deployed locations indicating a launch could occur at a moments notice.....20

SCENARIO 2

Another scenario involves present day Iraq who inevitably satisfies UNSCOM that they have complied with The U.N. mandate concerning WMD. However, Iraq was able to secretly conceal their Nuclear Weapons program and quickly amassed a new arsenal of nuclear missiles after economic sanctions were lifted. Iraq

believes that the U.S. Military Readiness level and Force Structure are significantly reduced in comparison to Pre-Desert Shield/Storm standards. Once again, Iraq invades Kuwait without fear of reprisals. Kuwait falls and Saudi Arabia requests U.S. Military Forces and opens up its APODS and SPODS. US Military starts flowing into theater and Iraq threatens the coalition with nuclear reprisals. Iraq deploys its ballistic missile arsenal to tactical locations and goes on alert awaiting release....²¹

SCENARIO 3

The third scenario involves a rerun of the Iran-Iraq shipping war in which Iran threatens to block the Straits of Hormuz. Iran is in possession of a relatively small number of unsophisticated nuclear weapons. The President of The U.S. directs U.S. Naval Vessels to escort commercial shipping. U.S. escort and reflagging operations continue with U.S. Military Forces flowing into theater. Iran senses a preemptive strike by U.S. forces and threatens the use of nuclear weapons against U.S. forces or any coalition state that is friendly to the United States.....²²

US INTERESTS

In all three scenarios, the US is deeply concerned about the human suffering, economic instability, and chaos that would reign in the wake of a nuclear blast. However, the level of US

interests are different for the three scenarios and may not always require intervention of U.S. forces.

The National Security Strategy of The United States says that South Korea is a vital interest to America. Nuclear use by North Korea would endanger not only forward deployed U.S. forces in South Korea and Japan but also would threaten their vast populations. Additionally, we are bound economically and have security treaties with South Korea and Japan.

In the scenario of a nuclear armed Iraq our National Security Interests are also very high for different reasons. The sovereignty of Kuwait and Saudi Arabia as well as insuring the supply of gulf oil is not interrupted to our heavily dependent allies, Japan and Europe, are vital interests to the United States.

In the case of a nuclear armed Iran, our national interests are moderate to high when one considers the steady flow of oil out of the Gulf and the Force Protection of U.S. ships in the Region.²³

According to Kahan,

"There are essentially four criteria on whether to use our military power to preemptively destroy the Third World Nuclear Force in question:

- •The higher the US interests at stake, the stronger the desire to use force to prevent nuclear use.
- •The greater the likelihood of imminent nuclear use by an adversary, the more pressure there will be for turning to military solutions .
- •The more sophisticated a nuclear opponent, the less likely that US decision makers will consider use of military force.

•The more domestic and international political opposition to the use of military force, the greater the chance that decision makers will rule out this option." ²⁴

IMMINENT USE

In situations where tensions are high between belligerents in a region, U.S. intelligence sources are able to view with real time clarity on a consistent basis, the mating of nuclear warheads to missile assemblies. Our National Command Authority then must make a choice between two risky actions.

According to Kahan the two choices are "Launching a preemptive counterforce strike, which may not be successful and could cause both actual and political fallout, or taking no offensive actions, and hoping that the adversary will not launch its missiles or that available missile defenses will intercept any such attacks."²⁵

POLITICAL ACCEPTABILITY

Let us not lose sight of the fact that launching a preemptive attack will not solely be determined by strategic intelligence assessments nor military calculations in a time of increased tensions where hostilities are about to commence. It is a very complex issue which must take into consideration not only the U.S. public opinion and congressional vote, but also the World opinion. World and U.S. public opinion would undoubtedly support

military action in the previously mentioned North Korean and Iraqi invasion scenarios. The world would clearly see North Korea and Iraq as rogue states which threaten global security. 26

MILITARY OPTIONS

Before nuclear use by a Third World Force there are five military options at our disposal to deter a rogue state from nuclear weapon use. The initial step would amount to a show of force by forward deploying U.S. Military Forces in the vicinity of the region of heightened tensions. The sort of forces we are referring to demonstrate U.S. resolve are Carrier Battle Groups(CVBG), forward based strategic and tactical aircraft as well as flying recon missions over the adversaries airspace. Additionally, we have the capability to forward base U.S. troops and conduct Joint and Combined training exercises which sends a signal that we are well prepared to project decisive military power if the need arises.

A second military option that is available to the National Command Authority is to neutralize the rogue states nuclear weapon capability. The U.S. arsenal currently has platforms that are capable of rendering a Third World Country's Nuclear Command, Control, and Communications system virtually inoperable through the use of Electronic Warfare. Another method that could theoretically neutralize an adversaries nuclear capabilities are long range Laser Weapons currently undergoing testing which may be mounted on high flying aircraft or satellites.

A third military option open to the NCA is a preemptive conventional attack against all the rogue state's nuclear capabilities which encompass both warheads and delivery systems. The most efficient means to strike at these targets is by conventional means. It would be extremely unlikely for the President to grant nuclear release to attack a Third World Nation's Nuclear Weapons with another nuclear weapon. A preemptive strike of this nature would cause both political and radioactive fallout as well as serious collateral damage. According to Dr. John Weinstein " the weapons of the Strategic Nuclear Triad are not valid in delivering the desired effects on target in this type of scenario." The Kilotonage of Strategic Nuclear Weapons would cause excessive collateral damage in the target area by laying waste to vast regions. Low yield Tactical Nuclear Weapons are no longer available to be a responsive military option. We have a wide range of Conventional Weapons Systems available to the U.S. based on the nature of the target. For instance, there are Strategic Bombers that can deliver conventional missiles and bombs, Land and Sea-Based Tactical Aircraft, and Air and Sea Launched Conventional Cruise Missiles. The chances of finding and destroying all nuclear targets with a preemptive strike is highly unlikely and may result in severe nuclear reprisals and war escalation.27

Another military option could involve US Special Forces inserted behind enemy lines to capture, disarm, or destroy the

adversaries nuclear forces. Essentially, this involves an extremely complicated mission by SOF to find the belligerents nuclear weapons and render them useless virtually simultaneously in a clandestine manner. This must be accomplished before nuclear use or movement of weapons to hardened positions. It is obvious, the potential for success for this type of mission is remote and may result in capture or in the worst case - execution of U.S. soldiers.

The last and probably best military option involves the deployment of both theater air and missiles to provide force protection for U.S. forces and other potential vital U.S. interests that may be endangered. The U.S. is pursuing several theater ballistic missile defense programs to give us this capability - such as the Theater High Altitude Area Defense (THAAD) system, PAC 3 (Patriot), and the SM-2 deployed on Aegis Cruisers. ²⁸

What if tomorrow morning we wake up and find Lower Manhattan destroyed by a nuclear weapon? What will our military reaction be? The U.S. Military response will be governed not only by the nature of the targets destroyed, but will also be determined if we can positively identify the perpetrator. We can respond military in essentially three ways.

The first military option would be to retaliate in kind against the rogue state with nuclear weapons. The U.S. National Command Authority could unleash the Strategic Nuclear Triad to

respond in a relatively short period of time. A response of this nature would be extremely controversial, with severe moral and political consequences.

Another method of response is to attack militarily with overwhelming conventional means to destroy the perpetrators complete military force as well as WMD capability. The main objective of this type of response is to limit collateral damage and loss of life to innocent noncombatants. A conventional means of attack is clearly the most politically acceptable way to go in surgically removing military targets from the battlefield by precluding unnecessary collateral damage.

Finally, what is our military option if we cannot positively identify the terrorist group or rogue state? This is probably the most difficult nuclear response decision the National Command Authority will have to make. One way to punish the suspected perpetrator is to attack with conventional military power by destroying all known terrorist training camps and WMD capabilities of Third World States having hostile intentions to the United States. The repercussions could be enormous and according to President Boris Yeltsin could lead to World War.²⁹

RECOMMENDATIONS

What should we do? Most countries of the former Soviet Union recognize that nuclear leakage is a global problem threatening terrible consequences. But they lack the means to prevent it.

Project "Sapphire" showed how the West can make a difference.

The United States has pledged more than \$1.5 billion to install modern security systems and to build secure storage facilities for fissionable materials. We can encourage the Laboratory-tolaboratory exchanges and manufacturers of nuclear security devices - microwave barriers, video surveillance, high tech fencing and detectors - to start joint production ventures with former Soviet states. We can tighten export controls in the U.S. and Europe. And, finally, we can accelerate the deal to buy 500 tons of Russian HEU now for conversion to civilian reactor fuel. This is a cheap and simple way of making sure it does not fall into the wrong hands. Our policies on countering the proliferation of nuclear weapons and weapons-useable nuclear materials are on target, however, the United States needs a strong leader, possibly in the NSC or Department of State, to champion the cause and effect the proper execution of these policies.

Countering loose nuclear weapons should be the First National Security Priority of the United States. This problem is here today, and we must be prepared to deal with it now and in the future. It is simply not going to go away with time. Once these nuclear weapons and weapons-useable nuclear materials have dispersed to the possession of Third World rogue states, there is not much we can do to prevent their usage in a regional setting by U.S. Military Means. This study discusses military options available to counter hostile countries nuclear weapons before and

after use. There are no clear cut and easy military means for neutralizing nuclear weapons in the most likely scenarios.

Therefore, The U.S. National Command Authority should consider the framework of these military options in countering nuclear weapons of mass destruction in the future. "I think if tomorrow or next week we learned that a dozen weapons or weapons equivalents have been stolen or sold to the Iranians, or the Iraqis, the first-day story will be shock, horror. And the second-day story will be, we knew this was going to happen, it was almost inevitable."³⁰

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²⁰Jerome H. Kahan, "Nuclear Threats From Small States," Strategic Studies Institute, 13 Jun 94, p. 8.

¹⁸ Ibid., p.2.

²¹Ibid., p.8.

²²Ibid, p.9.

²³Ibid, p.10.

²⁴Ibid, p.10.

²⁵Ibid, p.11.

²⁶Ibid, p.12.

²⁷Ibid, p.14-15.

²⁸Ibid, p.16

²⁹Ibid, . p.17

³⁰Allison, p.176

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